



## Quectel Antenna Data Sheet

Product number: Y0RCE0CA0AA

Version: 1.0

Date: 2024-04-01 Status:

Unreleased

Product Name: 4G External

Antenna Main

Features: Frequency Range: 700-960MHz, 1710-2690MHz

Size:  $\varnothing 46.0 \times 16.0$  mm Efficiency:

Up to 47% RoHS

compliant Environmental

protection standards Waterproof grade IP66

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## 1 Specifications

Test status: Single antenna test

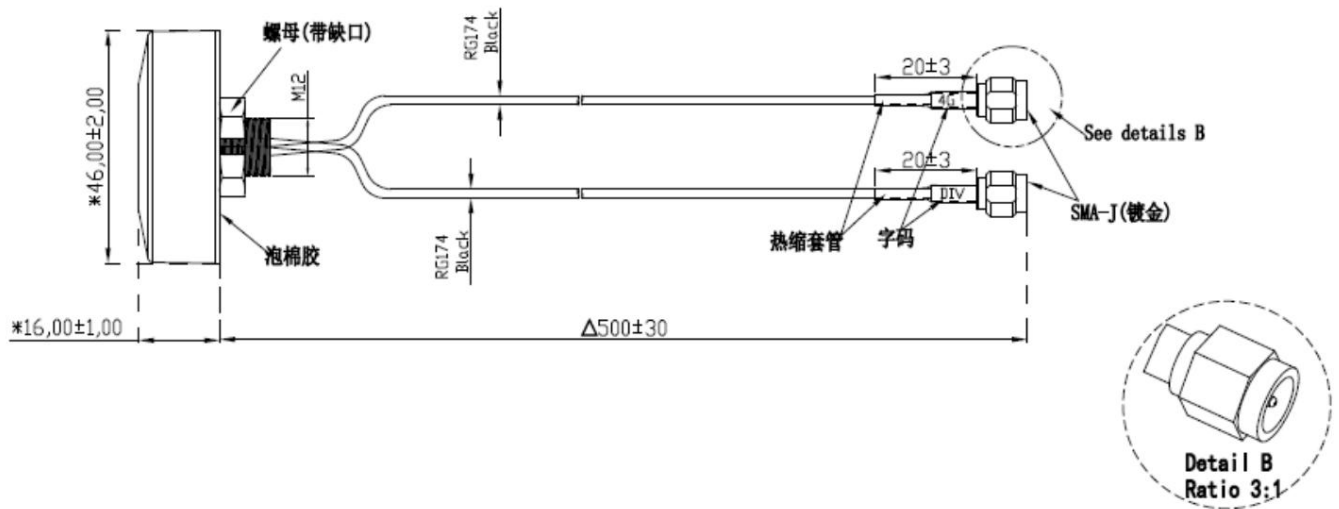
### 1.1. Electrical performance

| Electrical specifications |         |                          |
|---------------------------|---------|--------------------------|
| Frequency range           |         | 700-960MHz, 1710-2690MHz |
| impedance                 |         | 50 $\Omega$              |
| Polarization              |         | Linear polarization      |
| Radiation pattern         |         | Omnidirectional          |
| VSWR                      | 4G_Main | $\leq 7.4$               |
|                           | 4G_DIV  | $\leq 17.3$              |
| Peak Gain                 | 4G_Main | $\leq 3.6$ dBi           |
|                           | 4G_DIV  | $\leq 3.6$ dBi           |

### 1.2. Mechanical and environmental characteristics

| mechanical                          |         |                            |
|-------------------------------------|---------|----------------------------|
| Antenna size                        |         | $\leq 46.0 \times 16.0$ mm |
| Housing Material & Color            |         | ABS & Black                |
| Cable Type & Color & Length         | 4G_Main | RG174 & Black & 500mm      |
|                                     | 4G_DIV  | RG174 & Black & 500mm      |
| Connector Type                      |         | SMA-Mate (SMA-J)           |
| weight                              |         | Approx. 36.39 g            |
| Installation Type                   |         | Nut locking                |
| environment                         |         |                            |
| Operating temperature               |         | -40 °C to +85 °C           |
| Storage temperature                 |         | -40 °C to +85 °C           |
| Waterproof grade                    |         | IP66                       |
| Comply with environmental standards |         | RoHS                       |

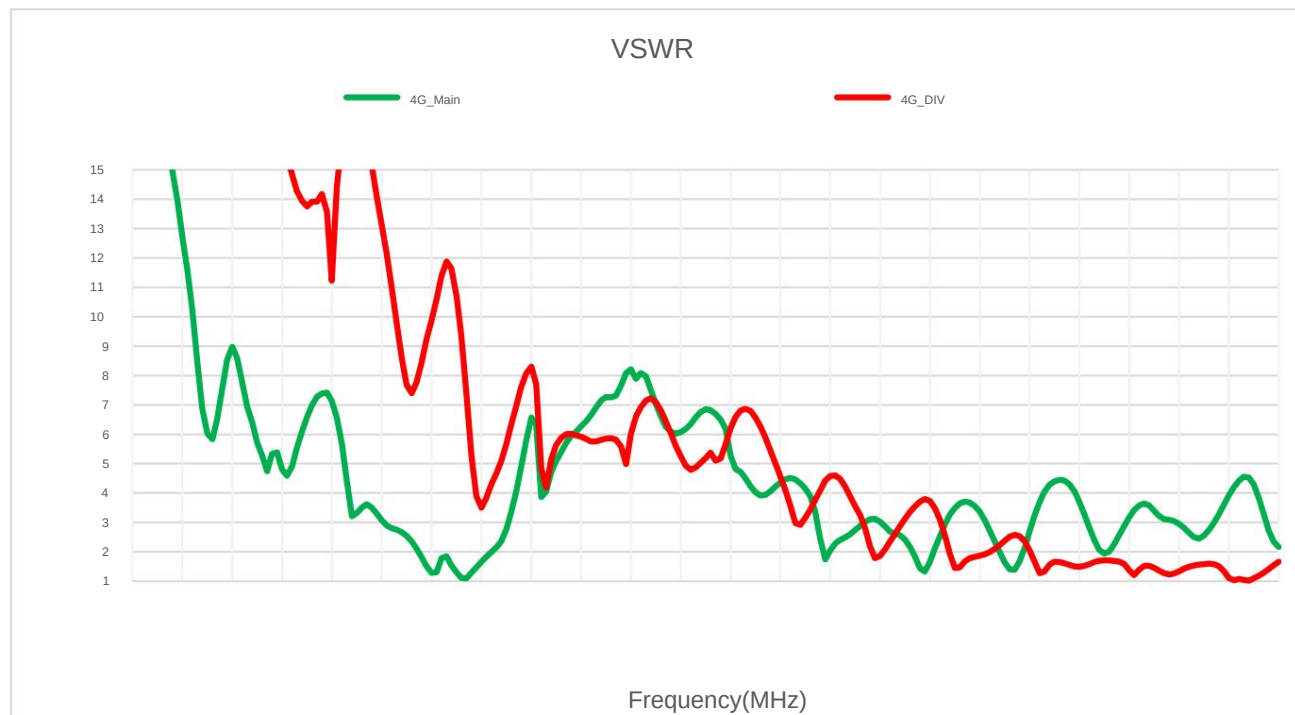
## 2 Drawings



## 3 Detailed performance parameters

### 3.1. S parameter test

#### 3.1.1. Voltage standing wave ratio



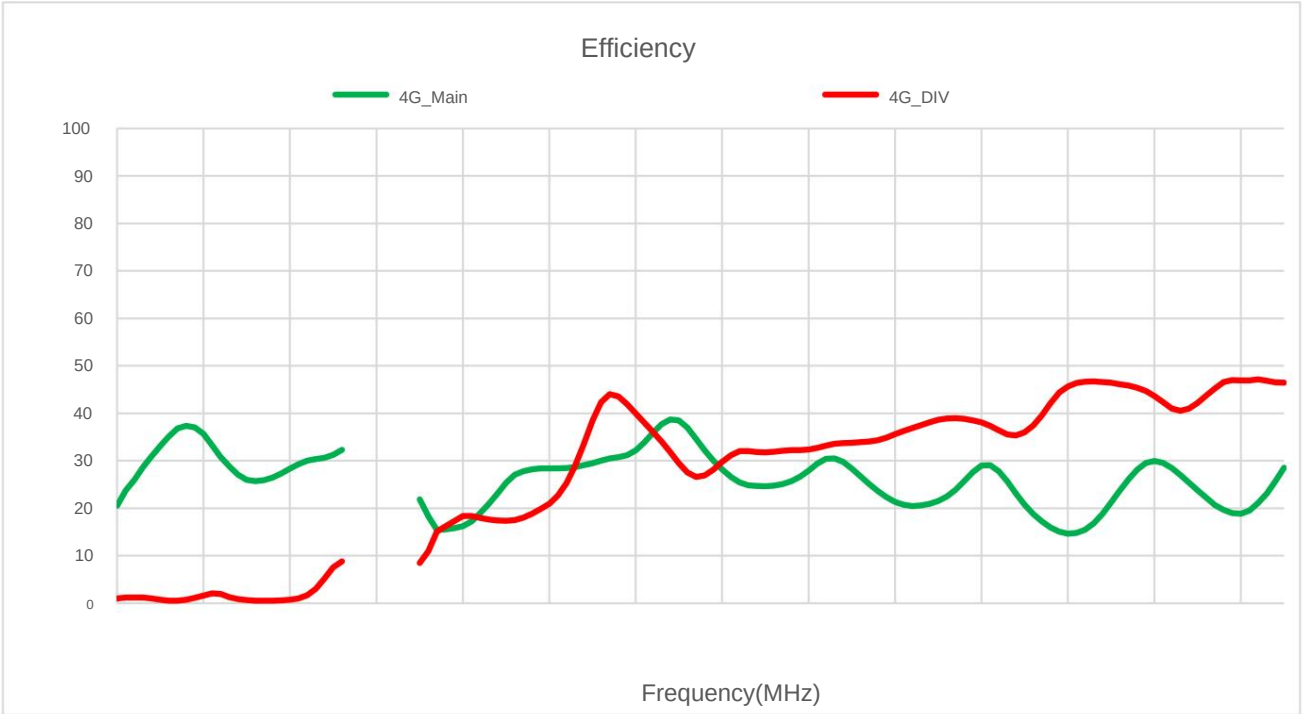
VSWR

| Frequency (MHz) | 600  | 630  | 710  | 830  | 900  | 960  | 1440 | 1710 | 1740 | 1880 |
|-----------------|------|------|------|------|------|------|------|------|------|------|
| 4G_Main         | -    | -    | 4.6  | 4.4  | 3.1  | 2.4  | -    | 4.5  | 4.3  | 3.1  |
| 4G_DIV          | -    | -    | 15.4 | 16.9 | 13.1 | 7.4  | -    | 4.1  | 2.9  | 2.2  |
| Frequency (MHz) | 1950 | 2140 | 2350 | 2450 | 2600 | 2690 | 4700 | 5000 | 5500 | 6000 |
| 4G_Main         | 2.4  | 2.0  | 1.9  | 3.4  | 3.9  | 2.3  | -    | -    | -    | -    |
| 4G_DIV          | 3.1  | 2.2  | 1.7  | 1.5  | 1.1  | 1.5  | -    | -    | -    | -    |



3.2. Radiation performance test

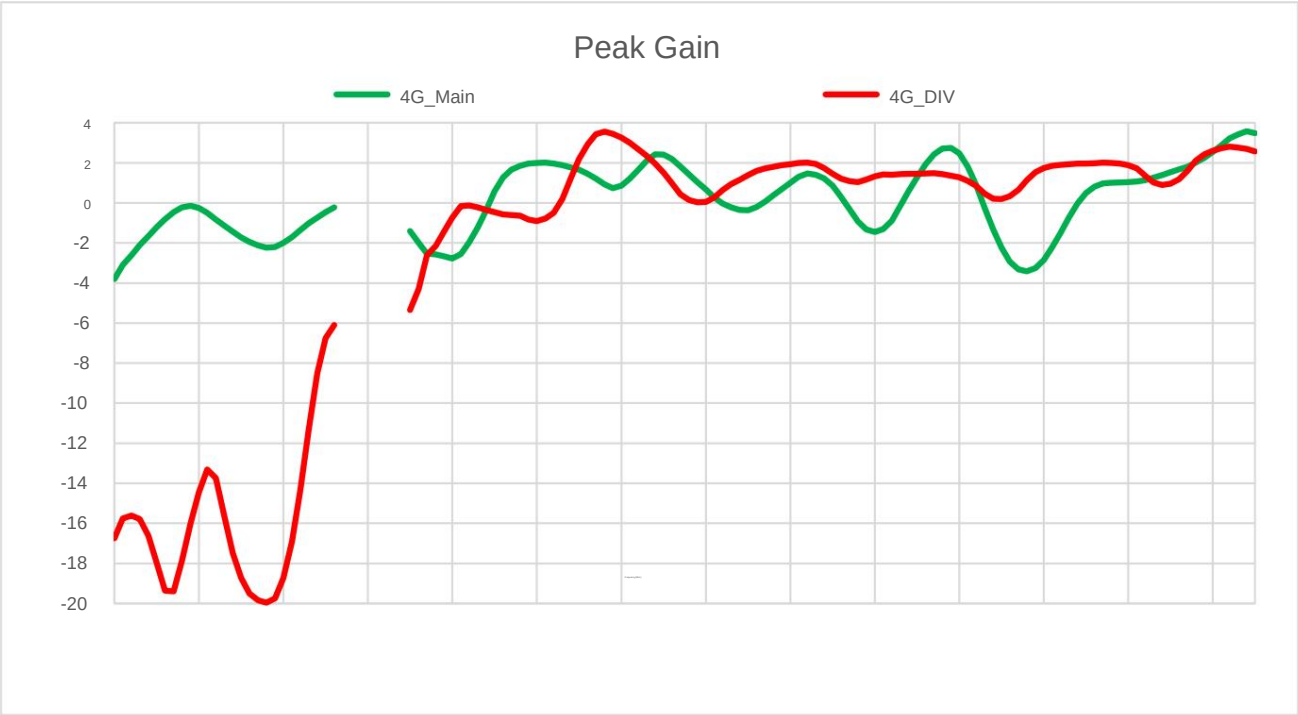
3.2.1. Efficiency



| efficiency (%)  |      |      |      |      |      |      |      |      |      |      |
|-----------------|------|------|------|------|------|------|------|------|------|------|
| Frequency (MHz) | 600  | 630  | 710  | 830  | 900  | 960  | 1440 | 1710 | 1740 | 1880 |
| 4G_Main         | -    | -    | 23.8 | 28.8 | 28.4 | 32.3 | -    | 18.3 | 15.8 | 28.7 |
| 4G_DIV          | -    | -    | 1.2  | 1.3  | 0.7  | 8.9  | -    | 11.0 | 17.3 | 29.0 |
| Frequency (MHz) | 1950 | 2140 | 2350 | 2450 | 2600 | 2690 | 4700 | 5000 | 5500 | 6000 |
| 4G_Main         | 32.2 | 26.7 | 29.0 | 14.7 | 23.8 | 25.7 | -    | -    | -    | -    |
| 4G_DIV          | 40.0 | 32.3 | 38.1 | 45.7 | 42.2 | 46.5 | -    | -    | -    | -    |



3.2.2. Peak gain

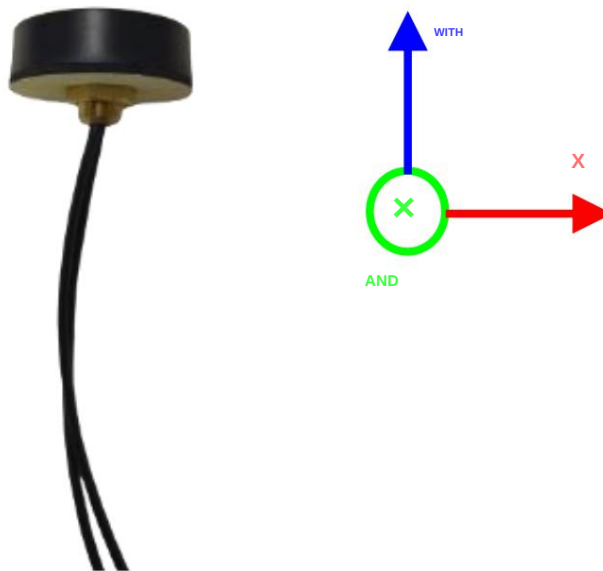


| Peak Gain (dBi) |      |       |       |       |      |      |      |      |      |      |
|-----------------|------|-------|-------|-------|------|------|------|------|------|------|
| Frequency (MHz) | 600  | 630   | 710   | 830   | 900  | 960  | 1440 | 1710 | 1740 | 1880 |
| 4G_Main         | -    | -     | -3.1  | -1.1  | -2.0 | -0.2 | -    | -2.0 | -2.7 | 1.9  |
| 4G_DIV          |      | -15.8 | -15.6 | -18.7 |      | -6.1 | -    | -4.3 | -1.4 | 0.2  |
| Frequency (MHz) | 1950 | 2140  | 2350  | 450   | 2600 | 2690 | 4700 | 5000 | 5500 | 6000 |
| 4G_Main         | 0.9  | 0.7   | 2.5   | -2.9  | 1.5  | 3.6  | -    | -    | -    | -    |
| 4G_DIV          | 3.3  | 1.9   | 1.3   | 1.7   | 1.0  | 2.7  | -    | -    | -    | -    |

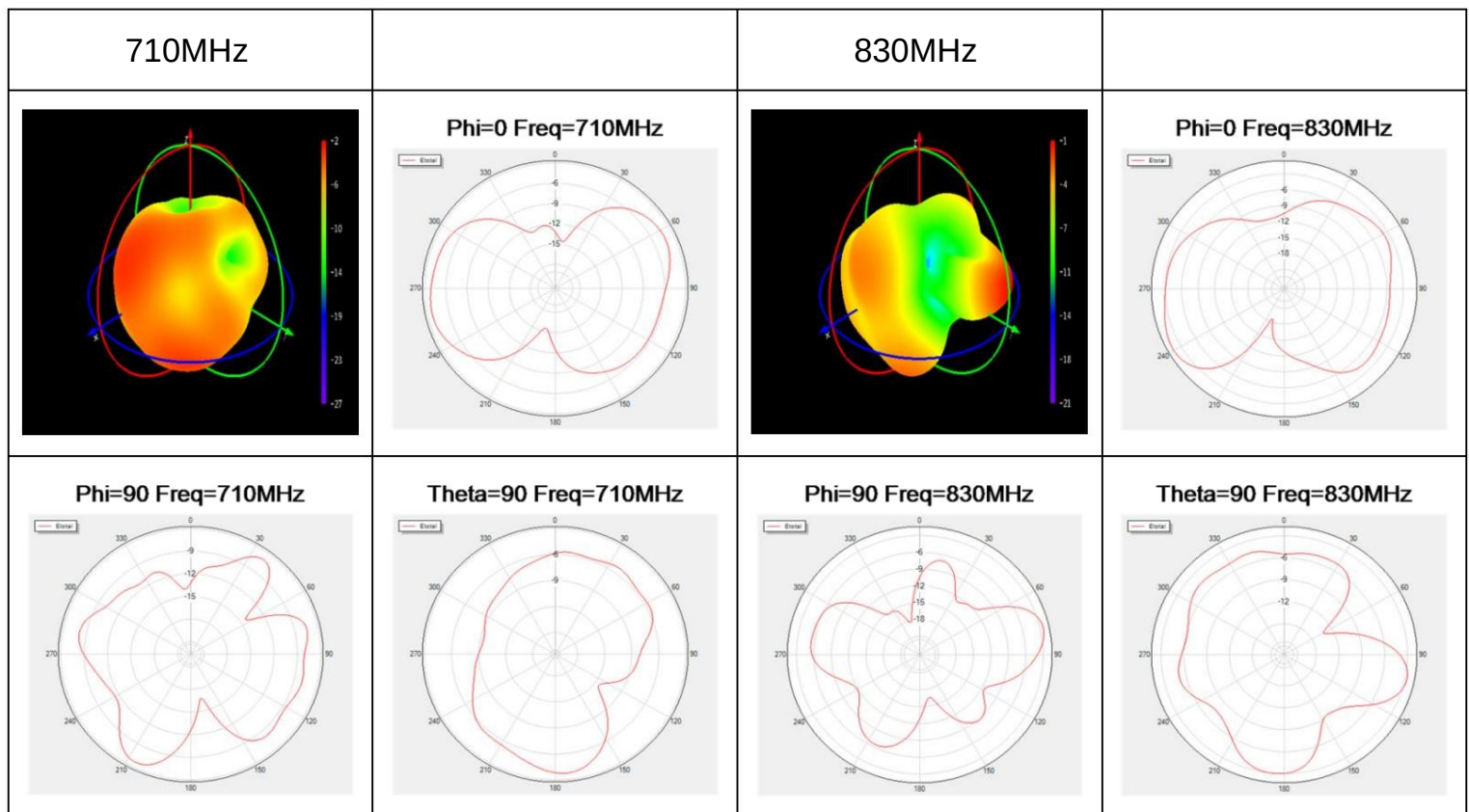
### 3.2.3. 2D radiation pattern

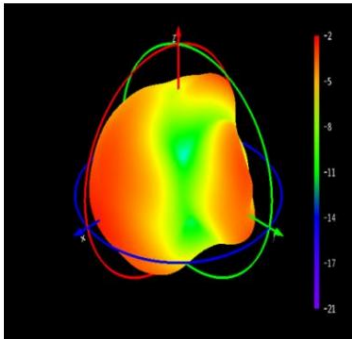
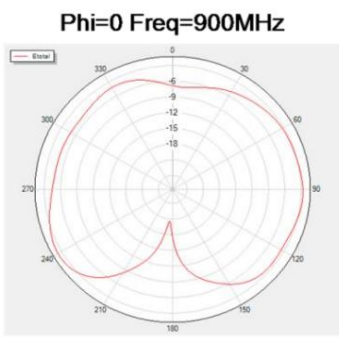
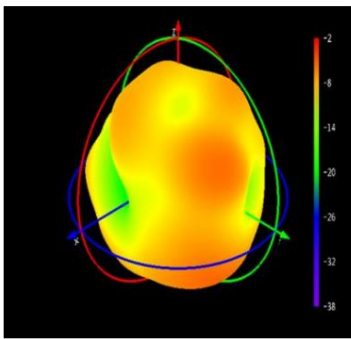
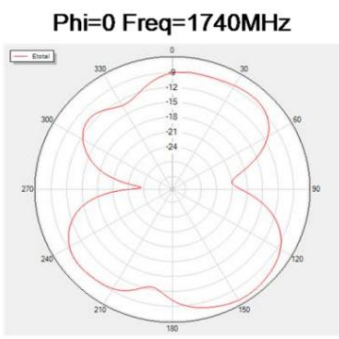
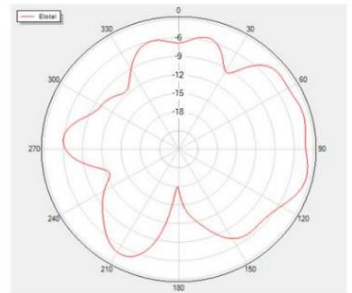
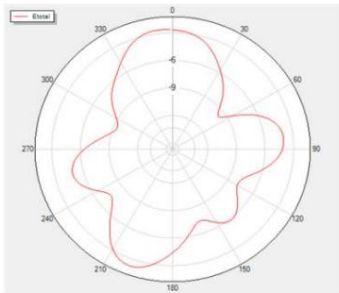
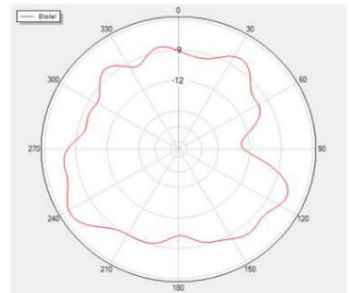
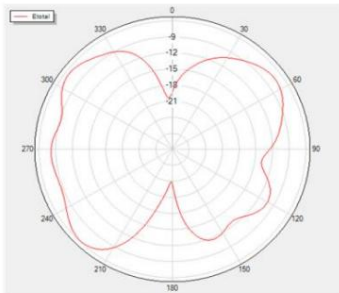
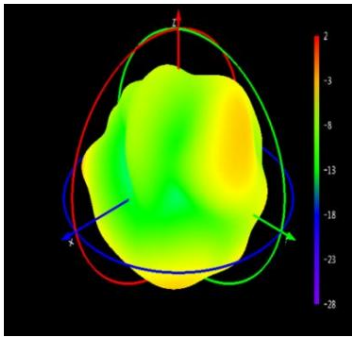
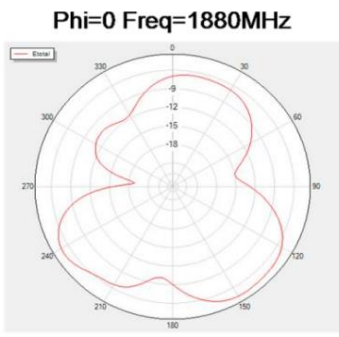
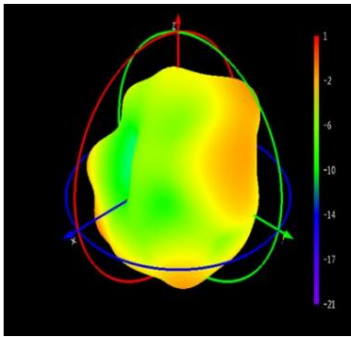
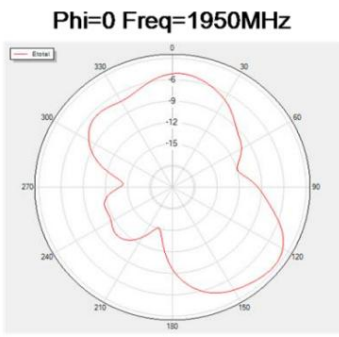
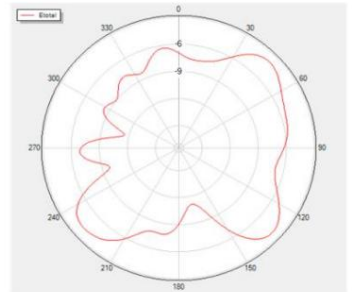
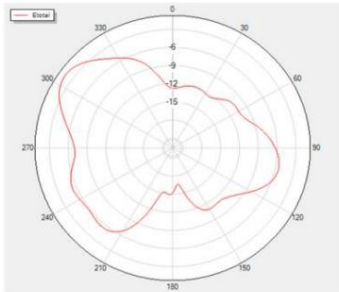
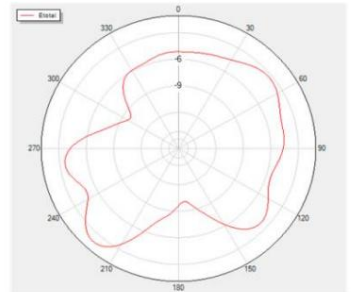
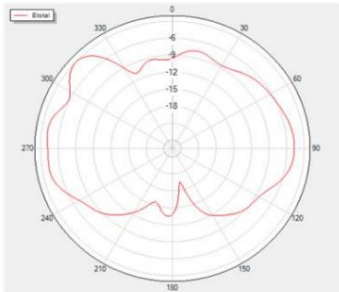
ÿ Test status: Single antenna test

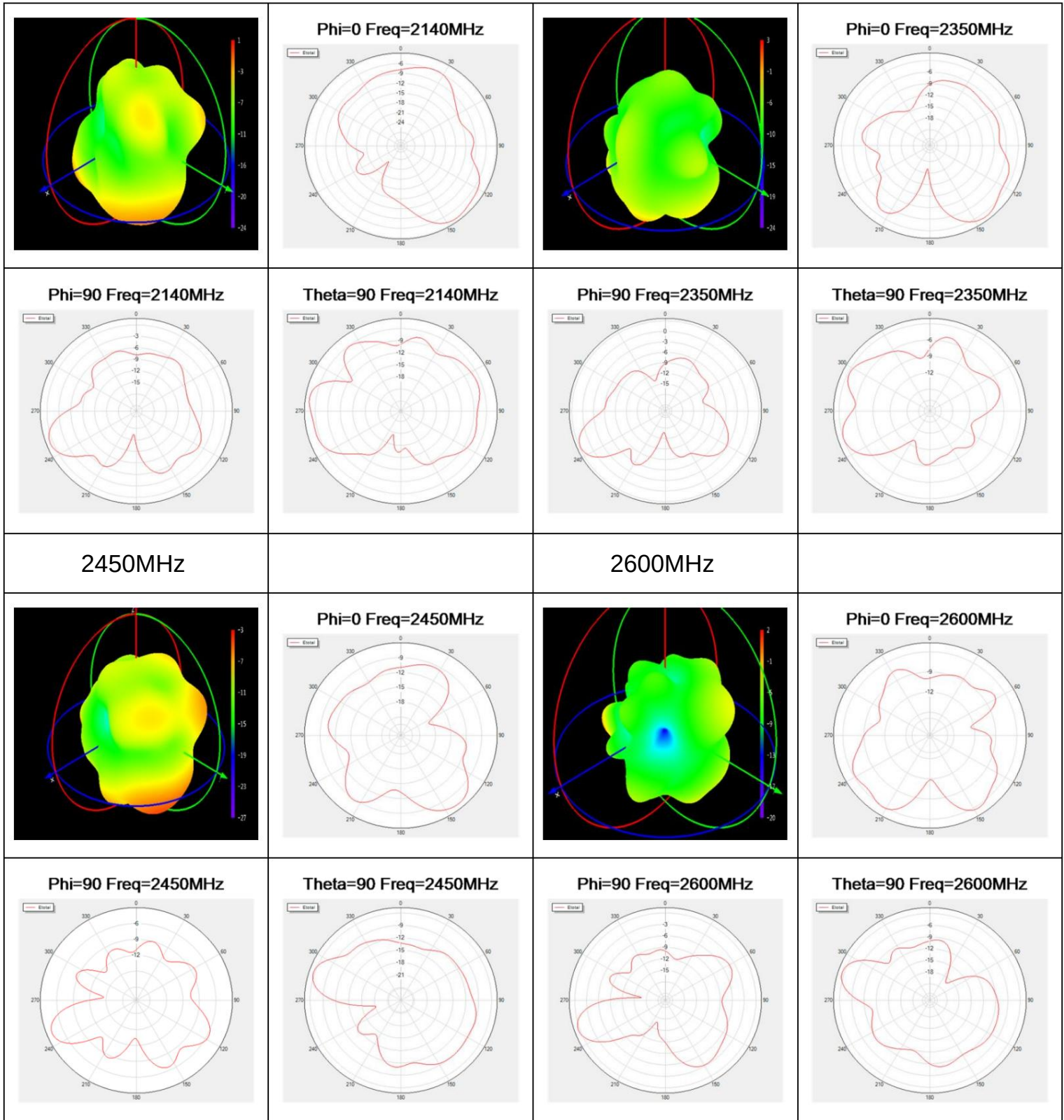
ÿ Test laboratory: SZ-S-1



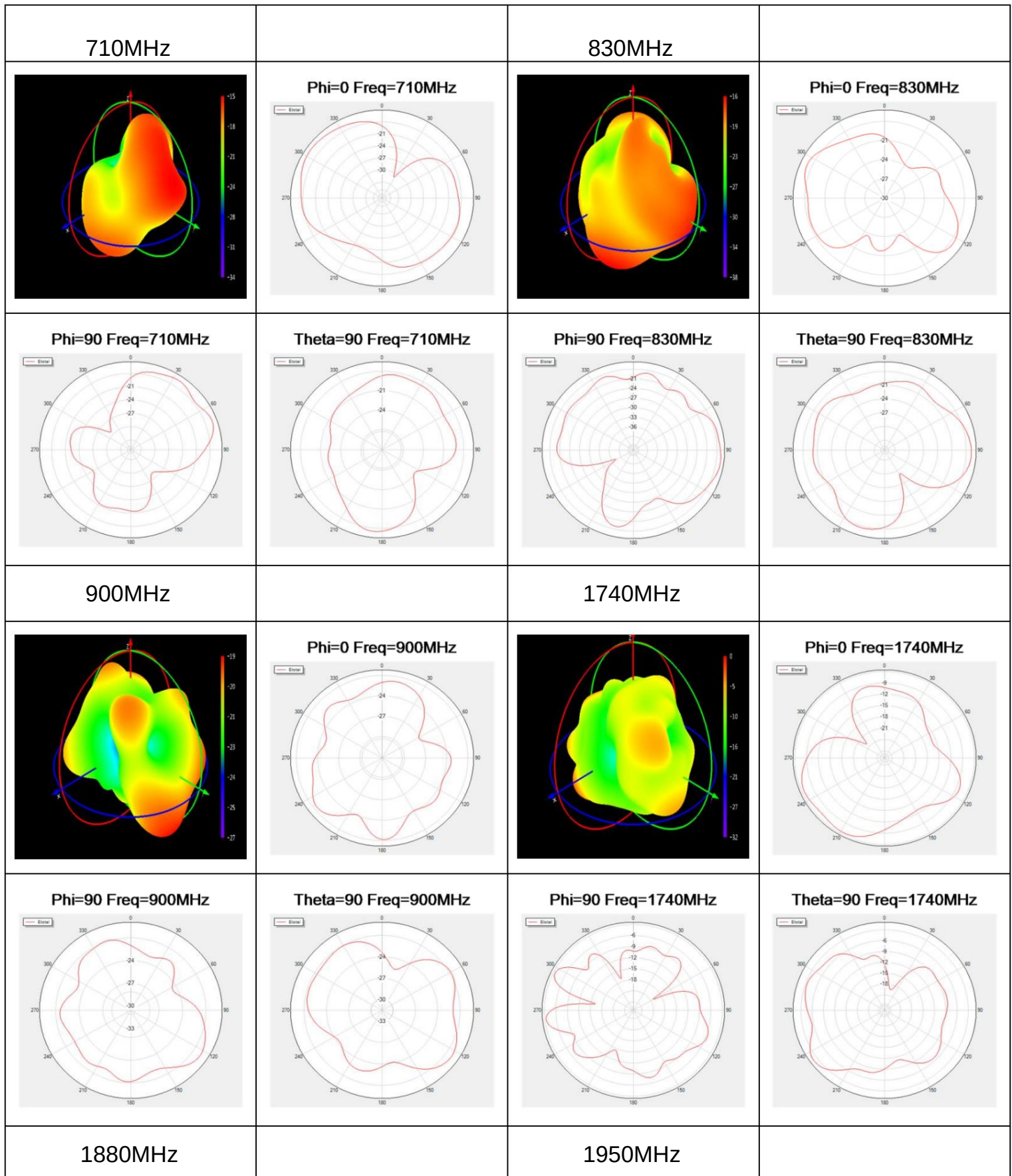
4G\_Main:

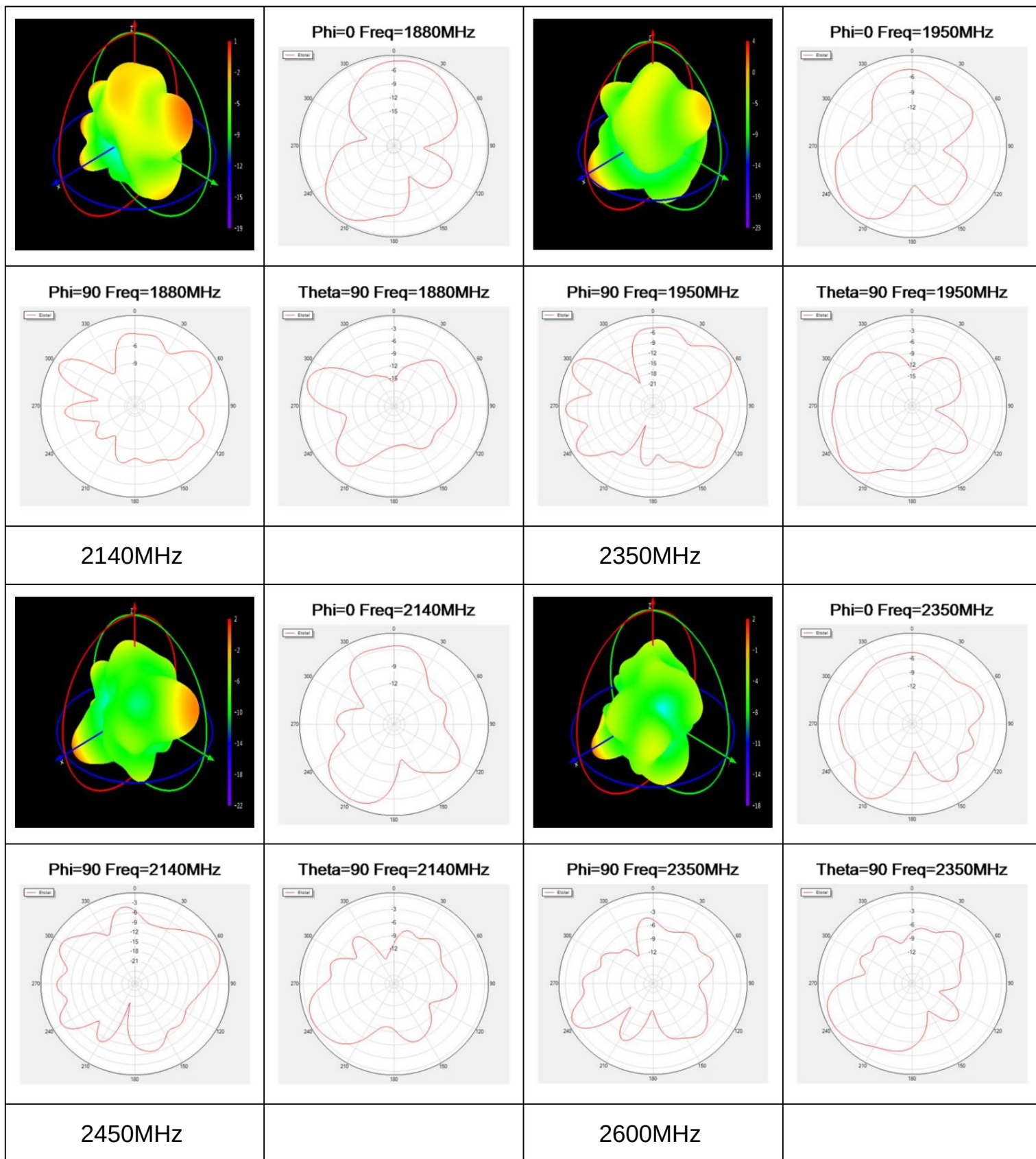


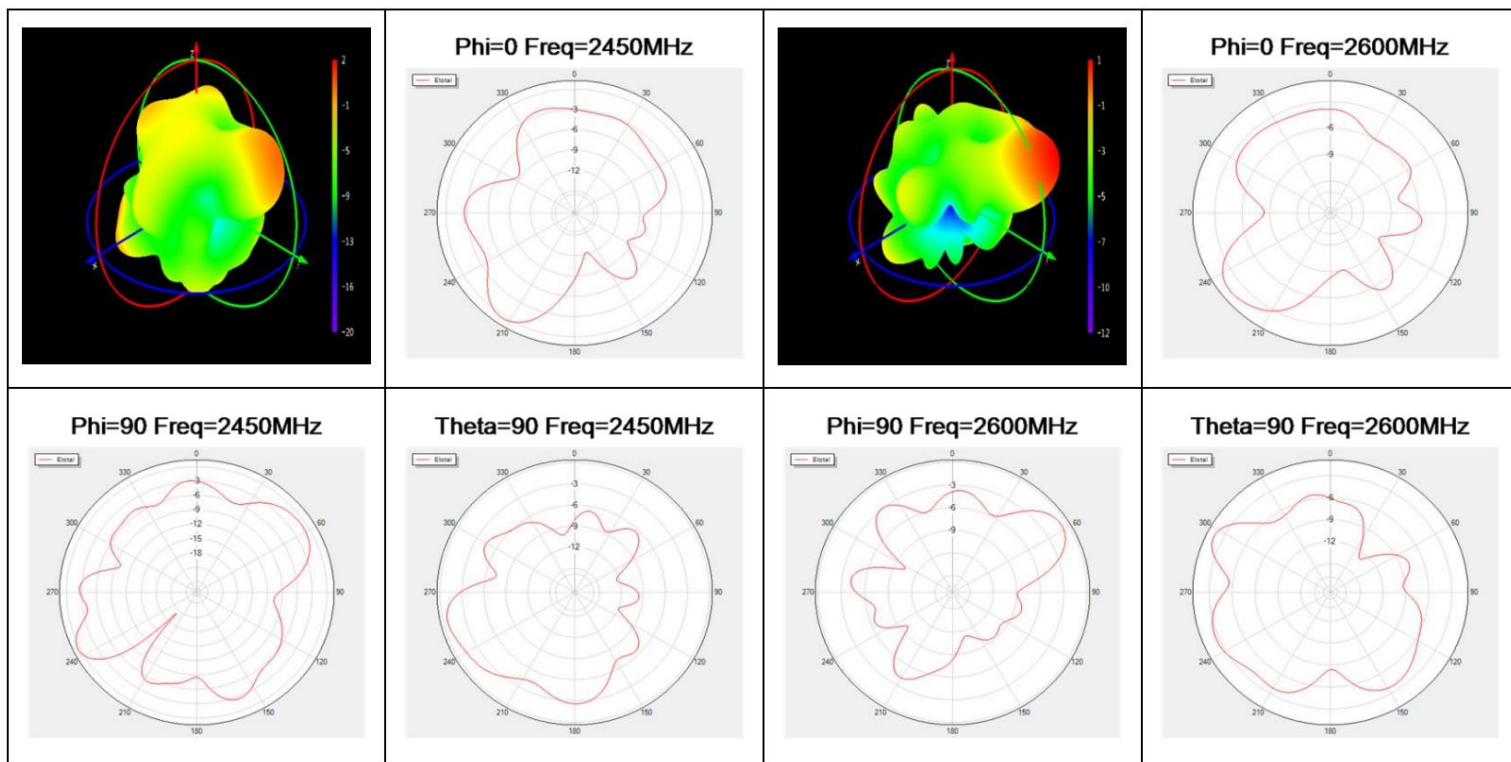
|                                                                                    |                                                                                     |                                                                                      |                                                                                       |
|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
| 900MHz                                                                             |                                                                                     | 1740MHz                                                                              |                                                                                       |
|    |    |    |    |
|   |   |   |   |
| 1880MHz                                                                            |                                                                                     | 1950MHz                                                                              |                                                                                       |
|  |  |  |  |
|  |  |  |  |
| 2140MHz                                                                            |                                                                                     | 2350MHz                                                                              |                                                                                       |



4G\_DIV







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## Revision History

| Version | Date       | Author                                            | Note              |
|---------|------------|---------------------------------------------------|-------------------|
|         | 2024-04-01 | Jialin CHEN<br>Shea LI<br>David Liu<br>Vinnie LIU | Create a document |
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